

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

(12) UK Patent Application (19) GB (11) 2 372 759 (13) A

(43) Date of A Publication 04.09.2002

(21) Application No 0129710.0

(22) Date of Filing 12.12.2001

(30) Priority Data

(31) 0105102

(32) 01.03.2001

(33) GB

(71) Applicant(s)

Hadley Industries PLC
(Incorporated in the United Kingdom)
Downing Street, Smothwick, WARLEY,
West Midlands, B66 2PA, United Kingdom

(72) Inventor(s)

Godfrey Thomas Deeley

(74) Agent and/or Address for Service

Laurence Shaw & Associates
5th Floor, Metropolitan House, 1 Hagley Road,
Edgbaston, BIRMINGHAM, B16 8TG, United Kingdom

(51) INT CL⁷

E04H 17/14

(52) UK CL (Edition T)

E1D DCA2 DLCKM D1074 D2036 D402

(56) Documents Cited

GB 2307253 A

GB 2129845 A

GB 2026126 A

WO 2000/004257 A1

US 5441240 A

(58) Field of Search

UK CL (Edition T) E1D DCA DF109 DLCKM DLCKN

DLEKMNV DLEKNB

INT CL⁷ E04H 17/14

Online: EPODOC, WPI, JAPIO

(54) Abstract Title

Security fence

(57) A fence comprises horizontally spaced pales (P) secured to one side of a horizontal rail (R), the rail having a main web (1) and at least one side wall (2) which extends above the web and away from the pales at an angle. In a preferred embodiment the angle is not 90 degrees. Spikes (6) may extend upwards from the angled side wall at positions which are located in the gaps (G) between adjacent pales.

In use it is intended that an angled side wall will prevent intruders from using the rail located in the gaps between the pales as a step.

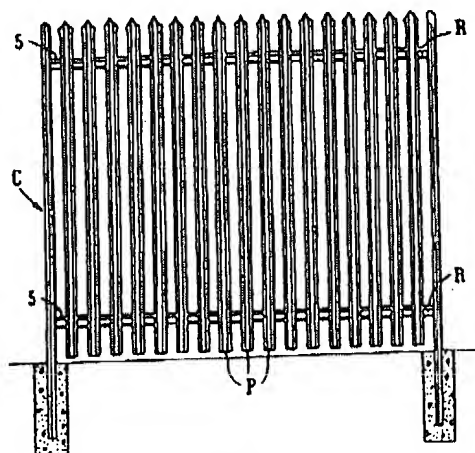


FIG. 1



FIG. 2

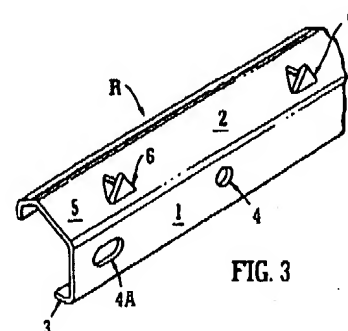


FIG. 3

1/1

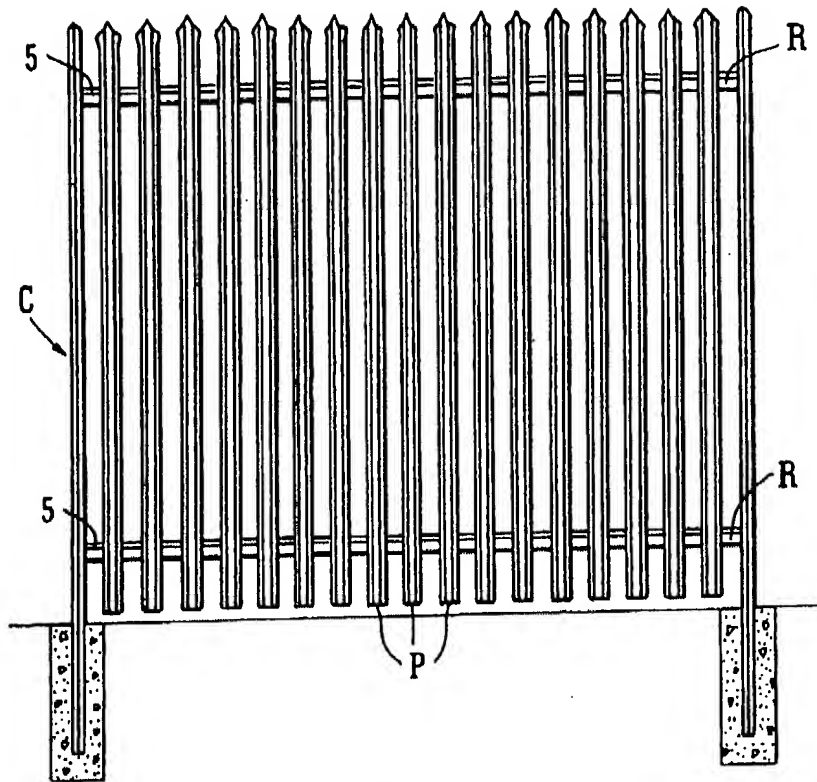


FIG. 1

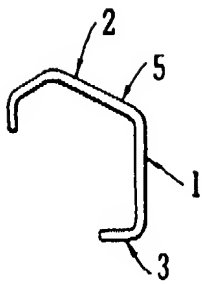


FIG. 2

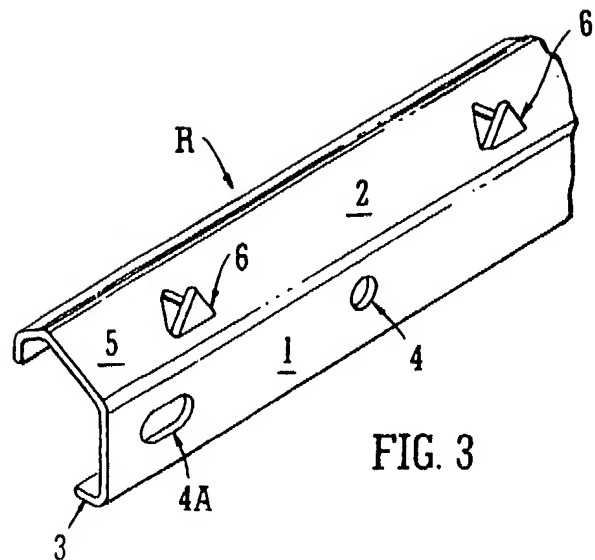


FIG. 3

1

RAIL FOR SECURITY FENCE OR THE LIKE

The invention relates to a security fence. It is known to make such a fence to protect an establishment having articles to be kept secure.

In one known style of fence, spaced apart metal posts called pales are secured to one or more horizontal rails between end posts. The pales may have the profile of a V, a corrugated W or corrugated D. The rail usually an L-shaped thick metal section and the pales are secured to the rail by bolts passed through aligned holes in the vertical leg of the rail and the pales. Typically the pales are spaced about 50 mm apart, and the exposed flat surface of the other leg of the rail could be used as a step by an intruder. The rails are made of relatively thick metal sections for strength. This increases the cost of the rails. It is one object of this invention to provide a fence which avoids presenting an intruder with this step. It is another object of this invention to provide rails of sufficient strength for the purpose specified.

In one aspect the invention provides a security fence comprising generally vertical pales each secured by a bolt or the like to one side of generally horizontal rail, the pales being spaced apart along the rail with gaps in between, the rail comprising a main web and at least one side wall, the pales abutting one face of the web of the rail, the side wall extending above the web away from the rail on the side of the web remote from the pales at an angle selected so that the gap portions of the rail between pales cannot be used by an intruder as a step.

In a more specific aspect the invention provides a security fence comprising generally vertical pales each secured by a bolt or the like to a generally horizontal

rail, the pales being spaced apart along the rail with gaps in between, the rail comprising a length of shaped metal section having a thickness of about 2 mm to about 4 mm, the section comprising a main web and at least one side wall which is above the main web and extends at an angle so that the gap portions of the rail between pales cannot be used by an intruder as a step.

Preferably the rail is of substantially channel shaped section having opposite side walls which make the rail rigid despite its thinness.

In another aspect spikes are struck up from the upper side wall in the gaps, to act as an added deterrent to an intruder.

Preferably the pales abut the outer face of the web of the rail, and the side walls of the rail extend away from the rail on the side of the web remote from the pales.

Typically the pales extend a vertical distance above the horizontal rail.

The pales are secured to the rail by bolts passing through aligned holes, in the usual way.

In order that the invention may be well understood it will now be described with reference to the accompanying diagrammatic drawings, in which:

Figure 1 is a front elevation of one security fence of the invention;

Figure 2 is an end view of a rail shown in Figure 1; and

Figure 3 is a perspective view from one end of another rail of the invention.

The security fence comprises spaced upright parallel pales P joined to an upper and lower horizontal rails R which are connected at their ends to end posts C. The pales P are spaced apart by a distance leaving gaps G in between. According to this invention the rails R are formed from cold rolled metal section, typically steel, to be of general channel shape comprising a main web 1 and opposite side walls 2,3. The section is from 2 to 4 mm thick, which is almost half the usual thickness of a hot rolled steel section rail. Fastener receiving holes 4 are formed at spaced apart locations in the main web 1 by which the pales P are secured thereto and holes 4a are present at each end for connection to the end posts C. The upper side wall 2 extends at an angle to define a ramp portion 5 to deter scaling of the assembly. The other side wall 3 is relatively short and straight. The dimensions of the section are selected to provide a predetermined yield strength. As shown in Figure 3, spikes 6 are struck up from the floor of the ramp portion 5 deter intruders from attempting to use the rail portions G as a step to gain access into the fenced area.

The pales P are rolled from metal section. They may be of any known shape and have fastener receiving holes.

In use, the rails R are secured between end posts C. The pales P are individually fastened onto the rail by aligning the fastening holes with the holes 4 in the rail and passing bolts B through and securing them in place by threading on nuts, not shown. The pales P are abutted against the face of the web 1 opposite to the side walls 2,3. The rail is sufficiently rigid to withstand distortion under load. The ramp portion 5 extends upwardly away from the pales into the secured area to prevent a thief from climbing over the fence by using the gap portion G as a step. The spikes 6 also act in this respect.

CLAIMS

1. A security fence comprising generally vertical pales each secured by a bolt or the like to one side of generally horizontal rail, the pales being spaced apart along the rail with gaps in between, the rail comprising a main web and at least one side wall, the pales abutting one face of the web of the rail, the side wall extending above the web away from the rail on the side of the web remote from the pales at an angle selected so that the gap portions of the rail between pales cannot be used by an intruder as a step.
2. A fence according to Claim 1, wherein spikes are struck up from the upper sidewall in the gaps.
3. A fence according to Claim 1 or 2, wherein the pales extend a vertical distance above the horizontal rail.
4. A security fence comprising generally vertical pales each secured by a bolt or the like to one side of generally horizontal rail, the pales being spaced apart along the rail with gaps in between, the rail comprising a length of shaped metal section having a thickness of about 2 mm to about 4 mm, the section comprising a main web and at least one side wall, which is above the main web and extends at an angle so that the gap portions of the rail between pales cannot be used by an intruder as a step.



Application No: GB 0129710.0
Claims searched: 1-4

Examiner: Joanne Pullen
Date of search: 7 June 2002

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK CI (Ed.T): E1D DCA, DLCKM, DLCKN, DLEKMN, DLEKNB, DF109
Int CI (Ed.7): E04H
Other: Online: EPODOC, WPI, JAPIO.

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2307253 A (BROADHURST) Figure 1 see sidewall (8).	1, 3 & 4
X	GB 2129845 A (HOWARD) Figures	1 & 4
A	GB 2026126 A (DÖRNEMANN)	
A	WO 00/04257 A1 (PANZER)	
A	US 5441240 A (ARNOLD)	

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.